



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,209	12/15/2003	Seiji Umemoto	Q78829	1811
23373	7590	03/21/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			NGUYEN, THONG Q	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/735,209

Applicant(s)

UMEMOTO ET AL.

Examiner

Thong Q. Nguyen

Art Unit

2872



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 26-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☒ Certified copies of the priority documents have been received in Application No. 09/758,165.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/06) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/15/2003</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The present Office action is made in response to the pre-amendment filed on Dec. 15, 2003. It is noted that in the mentioned amendment, applicant has made amendment to the specification and simultaneously canceled claims 1-25. The remaining claims 26-38 are examined in this Office action.

### ***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/758,165, filed on Jan. 12, 2001.

### ***Drawings***

3. The drawings contain six sheets of figures 1A-14 filed by applicant on 12/15/2003 have been received by the Office.

4. Figure 14 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

5. The abstract of the disclosure is objected to because it contains more than 150 words. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

6. The lengthy specification which is amended by the pre-amendment has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

7. The disclosure is objected to because the present Summary of the invention does not comply with the requirements as set forth in 37 CFR 1.73. In other words, the present summary is too long and contains numerous details of the inventive device. It is also noted that the summary refers to the prior art (see pages 6 and 7) and also refers to the drawings (see figure 8). Appropriate correction is required.

8. The disclosure is objected to because of the following informalities: a) In the material which is added to page 1 of the specification as requested by applicant in the Pre-amendment of Dec. 15, 2003, the phrase thereof --, now U.S. Patent No. 6,747,801—should be added after "January 12, 2001"; b) The brief description of figure 13 is unclear in comparison with the structure of the device as shown in the drawings. In particular, in page 10 (lines 13-14), applicant has stated that figure 13 is a view showing

the relationship between the refractive index and an optical path; however, figure 13 shows a physical structure of the a liquid crystal display; c) Page 14: line 3, "30 mm" should be changed to --30 nm--. Appropriate correction or explanation is required.

9. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The specification has not provided a positive support for the feature thereof "wherein a projected area...not larger than 10%" as recited in claim 35, last two lines of the claim.

### ***Claim Objections***

10. Claims 33-34 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

a) Claim 33 is objected to because the range governing the range of inclination of the slope is larger than the range of inclination recited in its base claim 26. In other words, while the range of the inclination in the base claim 26 is from 35 degrees to 48 degrees; however, the range in the claim 33 is not smaller than 35 degrees.

b) Claim 44 is objected to because the feature thereof "wherein said prismatic structure...the other end thereof " (lines 6-8) is unclear. It is unclear why a prismatic structure has continuous grooves wherein each of grooves is extended from one end of a film to other end of the film. The Examiner is of opinion that the

whole prismatic structure has such a feature. Should "each of which" (line 8) be changed to —said prismatic structure—to make clear the feature claimed?

***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claim 35 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 35 is indefinite because the feature "such as" (line 3) renders the claim indefinite. Applicant should note that the use of such terms make the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

***Double Patenting***

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 26-27 and 30-38, as best as understood, are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 6,659,615. Although the conflicting claims are not identical, they are not patentably distinct from each other because the device as claimed in claims 1-10 of the Patent '615 discloses an optical element having the following features: A transparent film having an in-plane retardation of not larger than 20 nm; An adhesive layer having its refractive index different by 0.1 or less from that of the transparent film wherein the adhesive layer is bonded to one surface of the transparent film; A prismatic structure formed on another surface of the transparent film which prismatic structure comprises a set of prismatic elements with optical path control slopes inclined by an angle in the range of 35 degrees to 48 degrees with respect to the transparent film plane.

Other features related to the structure of the prismatic structure as recited in present claims are disclosed in the claims of the Patent. In particular, the features of present claim 27 is disclosed in patent claim 2; and the features of present claims 30-32, and 34-38 are disclosed in patent claims 3-10, respectively.

***Claim Rejections - 35 USC § 102***

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 26, 28-31, 36 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Bao et al (EP 867 747, of record).

Bao et al disclose a reflective display system. The system comprises a transparent guide light adhesive to a panel. In columns 14-15 and figs. 9-11, the transparent light guide (20) having two surfaces in which one surface comprises a pattern of prismatic elements and the other surface comprises an adhesive layer (40a) for bonding the light guide to a panel (O). The prismatic configuration as shown in figure 10 comprises a continuously set of triangular-shaped projections (facing outwardly from the surface of the light guide) or grooves (facing inwardly from the surface of the light guide ) aligned in a substantially constant direction. Each projection/groove is formed by a first facet (22) defined a slightly angle with the surface of the guide light and acts as a reference, and other facet (21) of the projection/groove defined an angle larger than the angle formed by the mentioned first facet with the surface of the guide light. As shown in figure 9, the prismatic configuration comprises a plurality of prismatic projection which each extends in a direction parallel to the side (or entrance) surface of the guide light facing the light source system (30) (see also figure 11). Regarding to the feature that the transparent film has an average in-plane retardation not larger than 30 nm (or 20 nm as recited in claim 29) and the average thickness retardation is not larger than 50 nm (or 30 nm as recited in claim 29), it is noted that while Bao et al do not clearly disclosed that the transparent guide (20) has such an in-plane retardation and average thickness



retardation; however, Bao et al disclose that the light guide is made by acrylic resin (see page 7) which material is one of the material for making the transparent film of the present invention (see present specification in page 13). Since the same material is used for the transparent guide (20) in the device of Bao et al and the transparent film disclosed in the present application, it is clear to conclude that the transparent light guide (20) provided by Bao et al has an average in-plane retardation and an average thickness retardation in the range as claimed in the present claims 26 and 28-29.

Regarding to the difference in refractive indexes between the adhesive layer and the transparent light guide, it is noted that the material for making the adhesive layer (40a) is a resin having its refractive index matching with the refractive index of the transparent guide light (20) and the panel (O). See column 14, for example.

Regarding to the use of a reflector disposed to the transparent light guide, it is noted that the panel (O) comprises a reflector 98) which is disposed close to the surface having prismatic structure.

Regarding to the value of the inclination angle of the optical changing slope, it is noted that the angle defined by the facet (21) in each of the optical changing slope with the transparent surface of the light guide (20) is 45 degrees. See column 14, lines 23-24. See also *In re Wertheim*, 541 F. 2d 257, 191 USPQ 90 (CCPA 1976), "the disclosure in the prior art of any value within a claimed range is an anticipation of that range."

***Claim Rejections - 35 USC § 103***

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 27 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bao et al in view of in view of the Japanese reference No. 11-142618 (of record).

The optical device having a transparent light guide as provided by Bao et al as described above does not disclose that the adhesive layer has a strip sheet.

However, the use of a combination of an adhesive layer and a strip sheet on one surface of a glass plate wherein the adhesive layer is a diffusing layer is suggested to one skilled in the art as can be seen in the optical film provided in the Japanese reference '618. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the device as provided by Bao et al by using an adhesive layer having a diffusing feature and a strip sheet for covering the adhesive as suggested by the Japanese reference '618 for the purpose of providing an adhesive layer having a diffusing feature and the strip sheet which strip sheet is removably used to protect the layer before the adhesive is placed in use.

19. Claims 33 and 35, as best as understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Bao et al in view of Qiao et al (U.S. Patent No. 5,485,291, of record).

The optical device having a transparent light guide in which a prismatic structure is formed on one surface thereof as provided by Bao et al does not disclose that the prismatic structure comprises discontinuous grooves. However, the use of a light guide having a prismatic structure formed on one surface thereof wherein the prismatic structure comprises a plurality of discontinuous grooves is known to one skilled in the art as can be seen in the lighting panel provided by Qiao et al. In columns 2-4, Qiao et al discloses an arrangement of discontinuous grooves on one surface of the light guide (17). Each of the groove is formed by two slopes in which one slope is gentle inclination with the plane of the light guide, i.e. in the range of 1 degree to 15 degrees while the other slope is formed with the plane of the light guide by an inclination in the range of 35 degrees to 55 degrees. It is noted that since the depth of the groove in the range of 5 and 10 micrometers and the angle of the gentle inclination is in the range of 1 degree to 15 degrees; therefore, the length of each discontinuous groove is not smaller than five times as large as a depth of the groove. It is also noted that since the land between two adjacent grooves can be 200 microns; therefore, the area of the discontinuous grooves can be selected or controlled so that it is not larger than 10% of the area of the whole surface of the light guide. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the transparent light guide with prismatic structure formed on one surface thereof as provided by Bao et al by utilize a prismatic structure as suggested by Qiao et al for the purpose of improving the optical performance of the whole system.

20. Claims 32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bao et al in view of Umemoto et al (U.S. Patent No. 5,727,107, of record).

The optical device having a transparent light guide in which a prismatic structure is formed on one surface thereof as provided by Bao et al does not disclose that the prismatic structure comprises flat surfaces each having an inclination angle of not larger than 5 degrees with respect to the light guide plane and the projected width of the flat surface is not smaller than 10 times as large as a projected width of the changing slope. However, the use of a light guide having a prismatic structure formed on one surface thereof wherein the prismatic structure comprises a plurality of continuous grooves having the mentioned features is known to one skilled in the art as can be seen in the lighting panel provided by Umemoto et al . In columns 6-7 and shown in figures 5(a-d), Umemoto et al discloses a light guide having prismatic structure formed on one surface thereof wherein the prismatic structure comprises continuous grooves each formed by a long facet and a short facet wherein the angle defined by the long facet and the light guide plane is 2 degrees or less and the angle defined by the short facet and the light guide plane is in the range of 25 to 50 degrees. See columns 6-7. Regarding to the feature related to the comparison between the projected width of the flat surface is not smaller than 10 times as large as a projected width of the changing slope, such feature is disclosed by Umemoto in column 6, lines 10-18, for example. Regarding to the feature related to the shape of the grooves as recited in claim 32, such a feature is not critical to the invention and is also an

obvious matter to one skilled in the art. The support for that conclusion is found in the present application in which the present claim 31 recites that the groove has a triangle configuration and the art of Umemoto et al in column 6 and figs. 5-6 in which they disclose that the shape of the groove/protrusion has a tetragon configuration. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the transparent light guide with prismatic structure formed on one surface thereof as provided by Bao et al by utilize a prismatic structure as suggested by Umemoto et al for the purpose of improving the optical performance of the whole system.

### ***Conclusion***

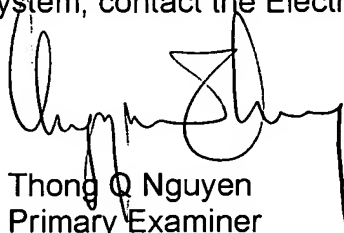
21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. It is noted that the U.S. Patent No. 6,671,994 as listed in the form PTO-1449 has an error in the patent number. The patent issued to Tai et al on 9/30/1997 has a Patent number of 5,671,994, not 6,671,994. It is also noted that the Patent No. 6,285,426 as listed twice in the form PTO-1449 is not corrected. The citation of the Patent No. 6,285,426 to Bao et al is uncorrected and has been lined-through. The corrected citation of the Patent 6,285,426 to Akins et al has been considered and initialed by the Examiner.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Nguyen whose telephone number is (571) 272-2316. The examiner can normally be reached on M-F.

Art Unit: 2872

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thong Q. Nguyen  
Primary Examiner  
Art Unit 2872

\*\*\*